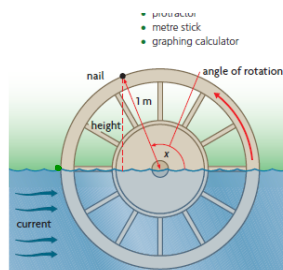


The Sine Function 6.3 and 6.4  
p. 335-339 & p. 344-348

### INVESTIGATE the Math

Steve uses a generator powered by a water wheel to produce his own electricity.

- Half the water wheel is below the surface of the river.
  - The wheel has a radius of 1 m.
  - The wheel has a nail on its circumference.
- As the current flows, the wheel rotates in a counterclockwise direction to power the generator. The height of the nail, relative to the water level, as the wheel rotates is graphed in terms of the angle of rotation,  $x$ .



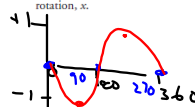
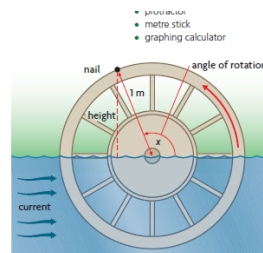
Maximum -  
Minimum -  
Eqn of Axis of Symmetry -  
Period -  
Amplitude -

Nov 16-7:42 AM

### INVESTIGATE the Math

Steve uses a generator powered by a water wheel to produce his own electricity.

- Half the water wheel is below the surface of the river.
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Maximum -  $\frac{1}{2}m$   
Minimum -  $-\frac{1}{2}m$   
Eqn of Axis of Symmetry -  
Period -  $360^\circ$   
Amplitude -  $1m$

$$y = 0$$

Nov 16-7:42 AM

$$f(x) = \sin x$$

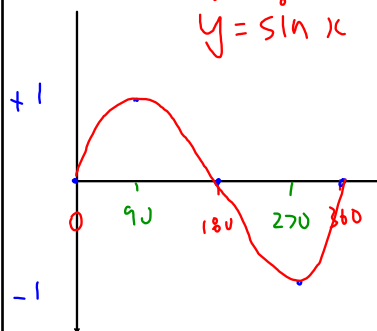
Key Points  
of Sine Function

- $y = \sin x$
- (0, 0) - eqn of the axis of symmetry
  - (90, 1) - maximum
  - (180, 0) - eqn of the axis
  - (270, -1) - minimum
  - (360, 0) - eqn of the axis

Apr 27-10:11 AM

$$f(x) = \sin x$$

$$y = \sin x$$



Nov 17-11:04 AM

Ex. 1 Sketch the sinusoidal graph with the following properties;

period = 20s    amplitude 4    start pt eqn of axis  
eqn of axis  $y=2$     2 cycles    clockwise

Maximum -  
Minimum -  
Eqn of Axis of Symmetry -  
Period -  
Amplitude -

Ex. 1 Sketch the sinusoidal graph with the following properties;

period = 20s    amplitude 4    start pt eqn of axis  
eqn of axis  $y=2$     2 cycles    clockwise

Maximum -  $(2+4)$  6m  
Minimum -  $(2-4)$  -2  
Eqn of Axis of Symmetry -  $2m$   
Period - 20s  
Amplitude - 4

Nov 16-7:47 AM

Nov 16-7:47 AM

Ex. Sketch the sinusoidal graph with the following properties;

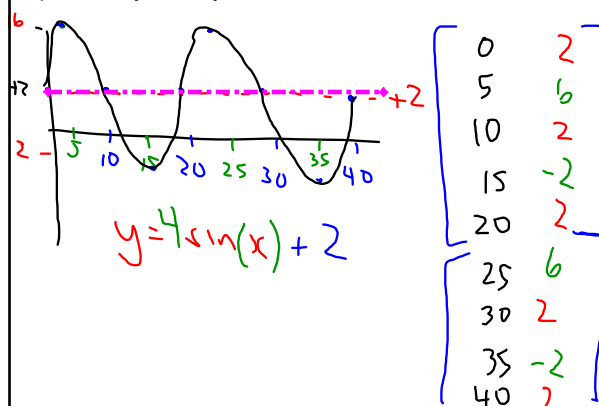
period = 20 amplitude 4

eqn of axis  $y=2$  2 cycles

Ex. Sketch the sinusoidal graph with the following properties;

period = 20 amplitude 4

eqn of axis  $y=2$  2 cycles



Apr 27-10:40 AM

Apr 27-10:40 AM

Create Eqn of Sin Function  
p. 340

q. 2 Max = 4, Min = 0.5

Amplitude = Max - Min / 2

$$4 - 0.5 / 2 = 1.75$$

Eqn of Axis = Max + Min / 2

$$4 + 0.5 / 2 = 2.25$$

$$y = 2.25$$

Therefore

$$y = \sin(x)$$

$$y = a \sin(x) + d$$

$$y = 1.75 \sin(x) + 2.25$$

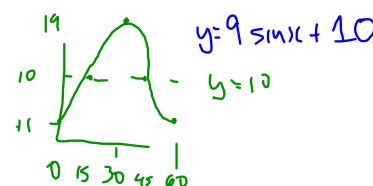


Nov 23-10:01 AM

**Hmk.**

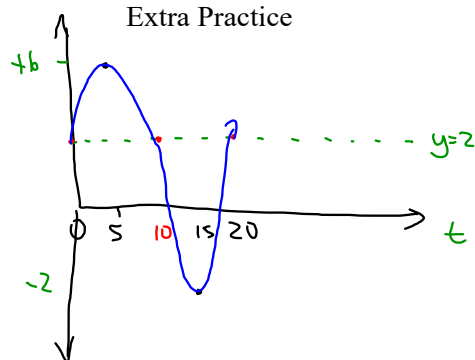
p. 339- 343 q. 1-3,6,8-10

p. 348- 352 q. 2, 4-12 desmos

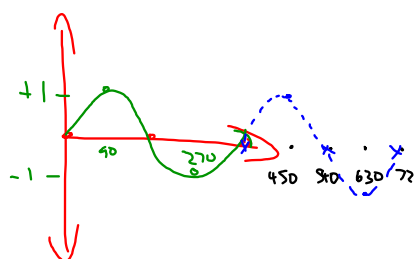


Apr 27-10:52 AM

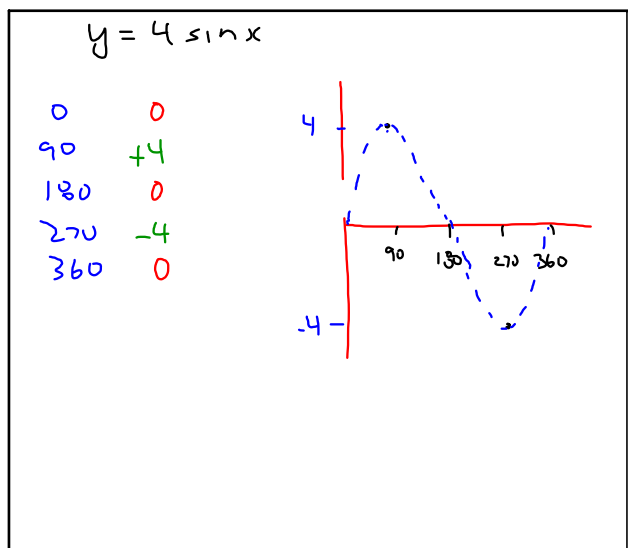
Extra Practice



Apr 19-8:41 AM



Apr 21-10:32 AM



Nov 18-2:50 PM